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P A P E R S

IN

COLONIES AND TRADE.

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## COLONIES AND TRADE.

The GOLD MEDAL of the Society was this Session voted to Dr. WILLIAM ROXBURGH, of Calcutta, for his valuable Communications on East-India Products.

The following LETTER was received from him, and Specimens of the ALDACAY, or CADUCAY GALLS, with which the Yellow Colour in the India Chintzes is formed, may be seen at the Society's House.

SIR,

I HAVE already returned the Society for the Encouragement of Arts, Manufactures, and Commerce, my thanks for the honour conferred on me by electing me a corresponding member; but the intention of this address is to offer

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to the Society a quantity of the dry, full-grown legumes, of *Mimosa Arabica*. (See Coromandel plants, Vol. II. No. 149).

I have been encouraged to make this offer to the Society in consequence of having observed, in the 19th volume of their Transactions for the year 1801, a paper on the production and application of myrabolans \*, and their use as a substitute for Aleppo galls, for which this mimosa fruit is also offered.

The legumes were gathered when nearly full grown ; at which period I am inclined to think they possess most tan and astringent matter, without being so much encumbered with the seed as when  
full

\* From the vernacular names *burrah* and *chootah* hurrah, which appear in the above quotation, the myrabolans presented to the Society were the entire fruit of *terminalia citrina* (and not of *phyllanthus emblica*) ; several varieties thereof are to be found in all the bazars over India. The tree is common in this country, which accounts for the fruit (*myrabolana citrina*, M. M.) being so cheap in Calcutta.

full ripe ; when they would add greatly to the bulk of the commodity, and weaken the other powers for which I hope this substance will be found useful.

The drug is packed in two half wine chests, and shipped, by permission of Government, on the ship Hope, Captain Dunbar, and recommended to the care of the Honourable the Court of Directors ; who, as well as this Government, are ever ready to encourage such researches.

The chest, No. 1, contains the fruit of April 1803 ; and, as I had not a sufficiency of that crop to fill the chest with, some of this year's is added at the top, but kept separate by paper. No. 2 contains the fruit of April 1804. My view in sending the drug of different ages, is to ascertain whether it improves or suffers by keeping.

Should this drug be found useful, I am inclined to think large quantities

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may be procured annually, at a very moderate expense, not only in Bengal, but on the coast of Coromandel, where the tree is equally plenty, and no use made of the fruit by the natives; so that the expense of gathering, and transportation, is all they would cost.

The tree which produces the yellow myrabolans, mentioned in the foregoing note, also yields a species of galls, of a very irregular shape and yellowish colour. When fresh they are lighter coloured, and darken by age, until they become dark brown, or nearly black. On the coast of Coromandel, where they seem to be better known than in Bengal, they are called Aldacay by the Telingas, and by the Tamuls, Caducay. I have never ventured so far in amongst the mountains as where the galls are found; but, from the information I have been able to collect, it seems that an insect punctures and deposits its eggs  
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in the young tender leaves of the tree, which causes them to swell into the various forms the galls assume.

They are sold in every market, being one of the most useful dying drugs the natives know. Their best and most durable yellow is dyed with them, and fixed with alum. With ferruginous mud they are used to dye black. They are also the chintz painters best yellow. Their astringency seems to be greater than that of the fruit, as an ink made with them resisted the weather longer than that which was made with the pulp which covers the nuts. I am inclined to think they are the *Faba Bengalensis* of our old *Materia Medica* writers.

Upon the leaves of this tree I have found an insect, which I take to be the larva of a coccus, or chermes; they are about three eighths of an inch long, and a quarter of an inch broad; flat below, convex above, and composed of twelve

annular segments. The whole insect is replete with a bright yellow juice, which stains paper of a very deep and rich yellow colour. Could these insects be collected in any quantity, I am inclined to think they might prove as valuable a yellow dye as the cochineal is a red.

I beg, Sir, you will inform the Members of the Society, that it will yield me particular pleasure, to be in any shape instrumental in bringing under their notice as many, as in my power, of the numerous treasures, yet little known, with which this extensive empire abounds; which, through their means, must essentially conduce to the advancement of arts, manufactures, and commerce; and, in the mean time, I beg leave to draw the attention of the Society to the following objects:

FIRST. — Resins, commonly called *dammer* in India. They are the produce of various trees, and, when boiled  
up



up with oil, are used instead of pitch, in the marine yards throughout India.

SECOND.—A drying oil, or very thin balsam, extracted, by incision, from the trunk of a large tree, which I have called *Oleoxygen Balsamifera*. It grows abundantly in Chittagong, and is chiefly used in painting.

THIRD.—Vegetable substances, and their extracts, containing the tanning and astringent principles, abound in India, probably more than in any other country in the world.

FOURTH.—Substitutes for hemp and flax are numerous over Asia. In my essay on these, above twenty are already enumerated. If found to answer, of which there is little doubt if put to the test of fair experiment, they might soon form a considerable addition to the export trade of these countries, and of use to the manufactures of the mother country. This appears to be a most important object, deserving the greatest encourage-

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encouragement, even when on the best of terms with Russia.

FIFTH.—The coarse silks, spun by the wild tussah and domesticated *Berinda* worms. The latter is soft as shawl wool, and incredibly durable.

SIXTH.—The very fine, delicate, silky wool, the produce of the two trees, *bombax pentandria* and *heptaphylla*, if still found unfit for the loom, might answer for hats, or some other such purpose, where the very softest hair of animals is employed.

I have the honour to be, SIR,

Your most obedient,

Humble servant,

W. ROXBURGH.

*Calcutta, June 18, 1804.*

From subsequent information which the Society have received, the ship *Hope*, containing the legumes of the *mimosa Arabica*, was taken by the French, and no other specimens of that article have yet been sent.

The

The Sum of THIRTY-FIVE DOLLARS was this Session voted to Mr. WILLIAM HUGHES, of Upper Canada, for the CULTURE of HEMP in that Province.

The following COMMUNICATIONS were received from him ; and SAMPLES of the HEMP and SEED are preserved in the Society's Repository.

SIR,

IN the present year I sowed, with hemp seed, two and a half acres of land, broadcast, having twice ploughed the land before sowing the hemp-seed. The first ploughing was in the beginning of April; the second ploughing and harrowing was on the thirteenth and fourteenth of May, immediately previous to the sowing. The hemp produced on the said two and a half acres was plucked on the sixteenth and seventeenth of August, and the produce thereof

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thereof amounted to one thousand eight hundred and forty-three pounds avoirdupoise weight. The soil was a black loamy clay, and no dung was used thereon.

*The Expenses of Cultivation were as follow, viz.*

	£.	s.	d.
Twice ploughing .....	0	15	0
Once harrowing .....	0	7	6
Plucking .....	3	5	0
Binding .....	0	7	6
Sowing .....	0	2	6

The above is Halifax currency, which is in proportion of eighteen shillings sterling to the pound.

I am, Sir,

Your obedient servant,

WILLIAM HUGHES.

Gonge-street, Upper Canada,

October 24, 1803.

To CHARLES TAYLOR, Esq.

Certificates

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Certificates from his Excellency Peter Hunter, Esq. Lieutenant-Governor of the province of Upper Canada, and from William Allan, Esq. and William Graham, Esq. two of his Majesty's Justices of the Peace within the home district of the said province, confirmed Mr. Hughes's statement.

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SIR,

I HAVE the honour to acknowledge the receipt of your duplicate letter of the 30th of June (the original of which has never reached me), acquainting me that the Society for the Encouragement of Arts, Manufactures, and Commerce, have voted three Rewards for the Culture of Hemp in Canada, viz. A Gold Medal to J. W. Clarke, Esq. of Montreal; a Gold Medal, or One Hundred Dollars, at the option of the Candidate, to Mr. Jacob Schneider, of York, in Upper Canada; and a Silver Medal,

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Medal, or Eighty Dollars, at the option of the Candidate, to Mr. Daniel Mosher, of Kingston, in Upper Canada. Which rewards, I am persuaded, will have the most salutary effects on the industry of the inhabitants of the Canadas.

I have the honour to be,

SIR,

Your obedient,

Humble servant,

P. HUNTER.

*York, Upper Canada,*

*Nov. 18, 1804.*

CHARLES TAYLOR, Esq.

THE THANKS of the SOCIETY were this Session voted to MR. WILLIAM VON-DENVELDEN, of Quebec, for the following COMMUNICATION relative to the Products of that Province.

SPECIMENS of the SEED, DOWN, and SUGAR, mentioned in his Letter, are preserved in the Repository of the Society.

SIR,

I TAKE the liberty to send you the seed and produce of a plant, which, unless it be already known to the Society, as being noticed in Botanical works, may possibly arrest the attention of its Members for a few moments. It grows very abundantly in the most barren fields of this country. It is vulgarly called *cotonnier*, cotton-plant. The farmers use the silky substance it produces as a substitute for feathers for bedding. It makes its first appearance  
of

of vegetation early in May, much like an asparagus, and is taken up, sold, dressed, and eaten, much in the same manner. If left to grow, it rises into a plant about 18 inches high, bears a flower (resembling the lilac, but of a finer, though weaker, fragrance) in the beginning of August, when an abundant dew is found every morning, for about a fortnight, on its leaves and flowers; which being shaken off before, or immediately after, sun-rise, into basons, a quantity of a liquid is thus gathered, which being reduced by boiling into a solid substance, yields a sugar, of which you have also herewith a specimen. I should not have entered into this detail, but an idea has struck me that this silky substance may probably be introduced, with great advantage, into the manufacture of writing-paper; at least in part, by mixing it, in due proportion, with linen and other rags; in which case great quantities thereof could



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could easily be procured from this province. Should you think it worth while to make some inquiries in regard to this suggestion, and that some manufacturers would wish to try the experiment, a sufficient quantity for that purpose might easily be sent next year.

I am, Sir,

Your obedient humble servant,

WILLIAM VONDENVELDEN.

*Quebec, Oct. 3, 1804.*

TO CHARLES TAYLOR, Esq.